

City of
Huntington Beach

Planning Commission Workshop

Green Building update
March 17th, 2011



Green Building Update

- Municipal solar project
- LED streetlights
- Energy Efficiency Project
- Planning Department support



Municipal Solar Project

- 2.3 Megawatts of solar canopies at 3 parking lot locations
- Held solar open house on 2/15/11
 - Articles in HB Independent and Register
- Construction during Summer 2011
- No upfront cost to HB & budget neutral
- Renewable energy attributes retained by HB (an asset)



Rendering of Design for Civic Center



Rendering of Design for Central Library



Benefits

- Environmental
 - 1,964 Kilo-watts of AC capacity
 - 3,317,105 KWh of clean, renewable power for 3 facilities
 - 12.2% of the city's total electrical use
 - 57% of the Library's use
 - 38% of the Civic Center's use
 - 46% of the City Yard's use
 - Clean air equivalent of 508 acres of pine/fir forest or 455 passenger vehicles off the road
 - ~2,382 metric tons of reduced emissions



Benefits

- Financial
 - No capital cost to HB
 - Only obligation to purchase power for 20 yrs
 - same as buying from utility
 - Renewable Energy Credit assets accrue to HB
 - HB prepared for future regulations
 - Shaded parking
 - Predictable energy prices
 - Long-term value (\$1.5M NPV)



Questions?

- DST reviewed
- DAT reviewed
- Council study session (10/19/09)
- Council approved Professional Services (1/19/10)
- Conceptual Design Review (Q3 2010)
- RFP for Power purchase agreements (7/6/10)
- Design Review Board (10/14/10)



LED Street lights

- Park bi-level with occupancy sensors – Murdy & Manning
- Downtown - Main St. controllable dimming lights
- Beachfront Parking lots – Blufftop
- Beachfront Parking lots – Beach to 1st



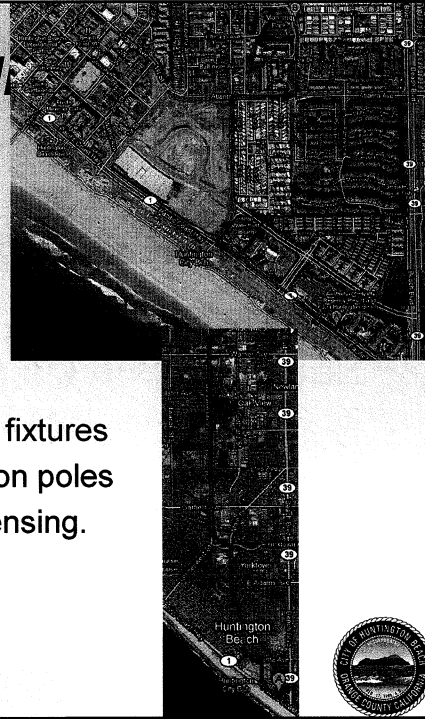
LED Street light Goals & Objectives

1. Public Safety
 - Occupants feel welcome & secure
 - Police feel secure
 - Conflicting goals can be managed through controls
2. Maintenance
 - Low-maintenance costs
 - Ease of installation
3. Energy & Environmental Management programs
 - Provide energy services (light) to people not inanimate objects
 - Energy efficiency (conversion)
 - Better light quality (subjective)



Pilot Install

- Park Lighting
- **Manning Park** –
 - 2 Bi-level Beta LED Edge
- **Murdy Park** – about 6 miles
 - Replaced 23 post top 70W HPS
 - And 5 250W HPS pole mounted fixtures
 - With 13 BetaLED Edge fixtures on poles
 - some with bi-level occupancy sensing.



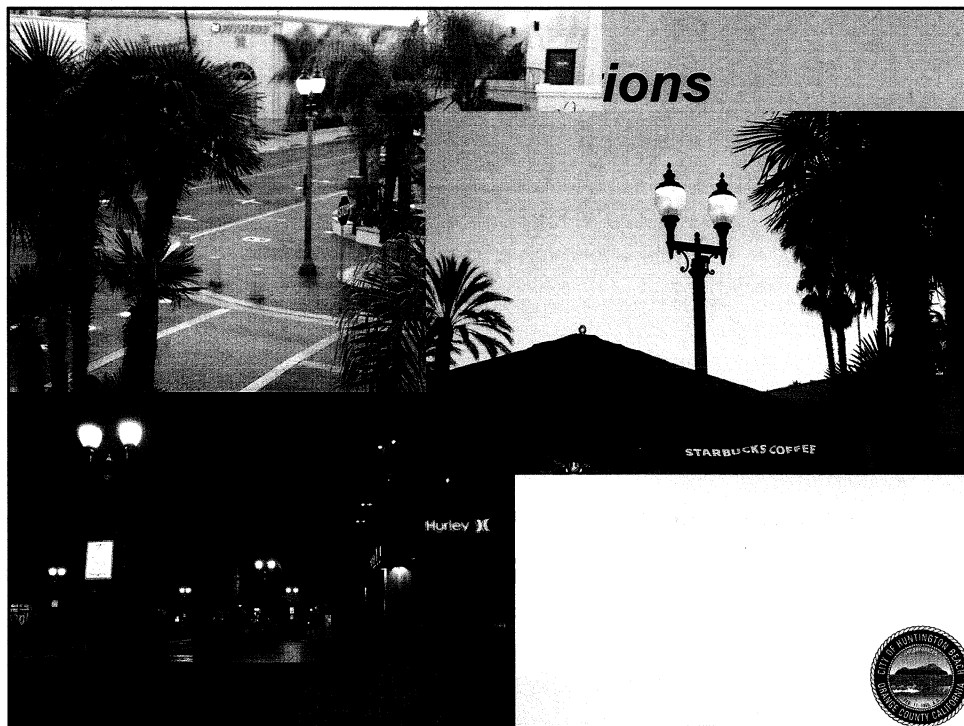
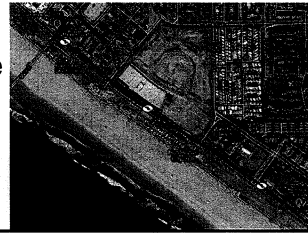
Pilot Installations

- Blufftop Parking parking lots – Kim Archetype emitter decks with wireless control
- 23 – 250W HPS with LED emitter deck retrofit kit based on Warp 9 design
- After gates are locked
- At 10pm
- Dim all lights to minimum
- Light levels with ability
- To over-ride in the field



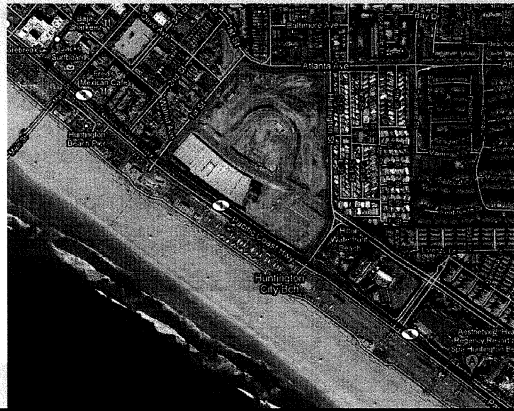
Pilot Installations

- Acorn Globe Streetlights – Sternberg 6 ARC at 3500K with wireless control
- Lots of stakeholders (police, businesses, visitors, locals, residents)
- Premium location with poor light quality and quantity
- Uniformity, CRI, low maintenance, better efficiency, controls
- 100% brightness = Police Over-ride mode
- ~70% brightness = Normal mode
- ~40% brightness = energy savings mode
- Controllable from city network



Pilot Installations

- Intersection safety lights – In front of Downtown Police substation
- Main & 6th Street



Future Plans

- Pier – Acorn Globes
- Large Parking lots
 - Solar carports with bi-level under-canopy lighting
 - Beach front lots – bi-level for after hours with field controllability
- Street lighting
 - 90+% owned by utility
 - Balance are 6KV circuits awaiting conversion
 - Best practices for LED suggest as part of capital projects
- Facilities
 - Include exterior lighting in performance contract energy retrofits
- Formal Policy adoption goal:
 - We use energy to provide services to people not inanimate objects.



Energy Efficiency Projects

- Recommendations from Retro-commissioning of City Hall and Central Library
- Detailed Study by AECOM
- Grant, Incentive & Debt funding
- Debt is repaid through 50% of the energy savings
- Allows city to reduce deferred maintenance backlog and save 2,000,000 KWh and 40,000 therms



Planning Department Support

- Costco
 - Transparent green features reporting
 - Equal to a certification outcome in my mind
- Other recommendations for projects



CA Energy Efficiency Strategic Plan

5 Local Gov't Goals by 2020

1. Reach Title 24 code adoption
2. Title 24 code enforcement
3. Lead by example in own facilities
4. Lead with innovative programs – efficiency, sustainability & climate
5. Efficiency expertise is widespread and typical

Potential for unfunded mandates.



Questions

- Municipal Solar Project
- LED Streetlights
- Energy Efficiency Projects
- CA Energy Efficiency Strategic Plan

